

## STUDIO REPORT: DIGITÓPIA AT CASA DA MÚSICA

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### ABSTRACT

Digital music making is evolving dramatically with today's increasing availability of free music software and musical content. Digitópia, a platform for collaborative music creation recently started at Casa da Música, Porto's main concert venue, addresses how these trends can affect generalized music creation and music software design, promote social inclusion, and lead to the emergence of multicultural communities of music makers/lovers. In this paper, we report on the musical activities conducted in the first months of existence of Digitópia, and highlight some developments for the future.

### 1. INTRODUCTION

Some of the most interesting recent developments in music are related to the fact that ordinary computers and mobile devices acquired capabilities to make, record, store and spread music, while becoming available to a greater number of people. An "active relationship" with music is nowadays within the reach of people that did not go through the process of formal musical education, due to an increasing number of software applications that allow creating and making music in a friendly and intuitive manner. We are witnessing a true worldwide revolution in the way we create, perform, spread, listen and learn music. The project Digitópia - Platform for the Development of Digital Music Communities - aims to explore these surges of development in a facility implemented in Casa da Música's main entrance hall, which will contribute: 1) to develop music and creativity amongst a range of ages and social conditions, and mostly amongst youth; 2) to foster the development of free music software; 3) to promote social inclusion, and lead to the emergence of multicultural communities of music makers/lovers; 4) to promote free musical content.

### 2. CASA DA MÚSICA

Casa da Música was conceived to mark the festive year of 2001, when the city of Porto was European Capital of Culture. A remarkable building designed by Rem Koolhaas was created exclusively for musical purposes, both in the area of presentation and public fruition and in the field of artistic education and creation. The project was to make this building the house for all music, setting itself within the city's urban renovation process and within a network of cultural equipment at a local and worldwide level.

Casa da Música is an institution with an inventive and wide cultural project that promotes the national and international musical scenario. Within this role, it encompasses a wide range of areas, from classical music to jazz, from fado to electronic music, from the great international productions to more experimental projects. It has two main concert halls, several rehearsal rooms, as well as many public spaces and facilities and it has already become a landmark in Porto's architectural landscape. Casa da Música has three resident instrumental ensembles – the Orquestra Barroca Casa da Música (Baroque orchestra), the Orquestra Nacional do Porto (Porto National Orchestra) and the Remix Ensemble. Together, they provide an answer to the needs of a vast repertoire reflecting four centuries of musical creation and are equally an incentive for contemporary music creation.

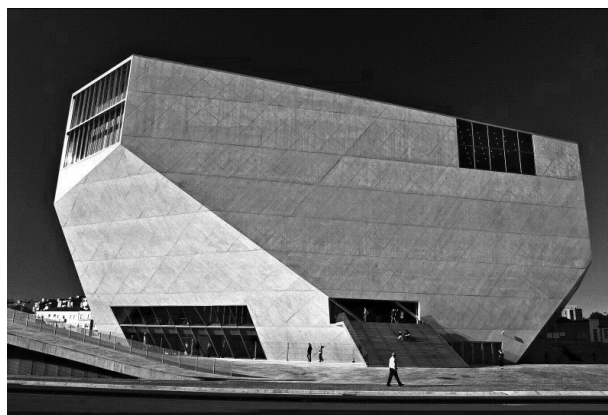


Figure 1. Casa da Música – Porto, Portugal.

#### 2.1. The Education Service

"Knowing. Hearing. Making. Creating" is the conducting line of the vast programme of the Education Service of Casa da Música which is developed throughout the year, presenting activities ranging from short time experiences to long term projects. The possibilities to create and learn within a continuously renewed schedule are manifold, and include workshops in many areas of music making, interactive exhibitions, concerts, training sessions, conferences, amongst others. The Education Service of Casa da Música develops activities exploring both the conventional grounds and those that involve technological innovations, and consistently takes music into other areas and arts.

The programme is planned to serve a wide range of audiences of all ages and social/cultural backgrounds, from babies to senior citizens, from music experts to amateurs, from families to schools, including groups with special needs. The Educational Service of Casa da Música also represents a great social inclusion and intervention project, and a substantial part of its effort is devoted to community projects.

## **2.2. Digitópia**

Educational activities with computers were amongst the first to be offered in a regular basis since the beginning of Casa da Música in 2005, with HyperScore [1] being a case of success among schools that would come for a workshop experience with this software. In 2007, a new trend was initiated and a set of programs developed on purpose by Rui Penha opened the perspectives of musical experiences with computers into new areas. At around the same time, a series of discussions was initiated with partners from universities and research institutions in Porto, namely the Institute for Systems and Computer Engineering of Porto (INESC Porto), the School of Music and Performing Arts (ESMAE) and the Portuguese Catholic University (UCP), addressing the issues of providing a broader access to digital music making within informal contexts and contributing to the development and spreading of free software. It was within this framework that the idea of creating a Platform for the Development of Communities in Creating Digital Music was conceived.

It was decided that UCP, ESMAE and INESC Porto would collaborate with Casa da Música in a project that would have its visible face as a centre installed in the main entrance hall at Casa da Música. This centre would be open for free use by anyone. It would also be used in CyberSom workshops (with schools during the week and general public on Saturdays) according to a predefined schedule. It was later decided that during three or four hours in the day (16h00-19h00 on week days or 16h00-20h00 on weekends and holidays), an assistant would be available to explain and introduce the project, as well as to help people dealing with the computers and software. The profile of these assistants is quite broad, ranging from young composers or advanced music students to digital musicians without formal musical training.

The centre was to be equipped with computers and all the equipment associated to music making within the concept of “home studio” or “desktop musician”. These computers should be representative of the available state of the art for regular use and the software to be installed should favour, in the first place, the use of reliable free software with a wide range of capabilities for music making. It was also considered that some commercial programs could be present in order to fulfill occasional requirements unavailable in an easy to use package within the free software realm. Finally, in order to maintain the coherence of all the spaces in Casa da Música, and to make the space attractive, special

attention was given to the layout of this centre. Digitópia opened in late July 2007 and we describe next the experience we had so far. In the last part of this article we also analyze some further developments.

## **3. GOALS**

At the conception of Digitópia, the partners outlined a group of goals, compiled in a document entitled “Para um Manifesto Digitópia” (Towards a Digitópia Manifesto). These goals focused three main areas: 1) music making; 2) the establishment of communities around music making and, to a lesser degree, music software development; 3) the promotion, use and development of free software and content for music making. Right from the beginning, however, it was decided that neither of these goals should be in any way “enforced” on the surrounding community. Instead, Digitópia would be all about creating a fertile environment for musical experiences and catalyzing the, otherwise ideally autonomous, establishment of communities.

### **3.1. Music Making**

The main goal of Digitópia is to capture everyone’s attention to the growing fact that computers have nowadays the power to help anyone fulfil their own musical ambitions, regardless of their previous musical experience and formal education. Digitópia provides selected tools, from the basic loop-based sequencer all the way to some fairly advanced software for sound sculpting, and know-how, in the form of personal help from the assistants, documentation (both written and multimedia) and workshops, but visitors are nevertheless free to use the resources as they deem fit to best achieve their musical goals, whatever the genre or degree of complexity they require.

### **3.2. Establishing Communities**

From the beginning, Digitópia was conceived as an inviting nest for the establishment of communities of computer music making. Ideally eclectic in their nature and social realms, it was thought that these communities would grow mostly around specific events at Casa da Música – e.g. the “Clubbing” nights or the contemporary music concerts – or at specific times, also related with the personal experience of the assistant assigned to each schedule.

### **3.3. Towards Musical Freedom**

In Digitópia, a special focus is put on free or open source software and freely available musical content. Particularly, the majority of the software in use follows the principles defined by the Free Software Foundation<sup>1</sup> or by the Open Source Initiative<sup>2</sup>. Similarly, most of the musical content is made available under a Creative Commons (CC) license<sup>3</sup>. These licenses leverage the

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<sup>1</sup> FSF - <http://www.fsf.org/>

<sup>2</sup> OSI - <http://www.opensource.org/>

<sup>3</sup> <http://creativecommons.org/>

free and flexible exchange of software and content among users and software developers, promoting collaboration and the creation of groups or communities of interest around music and musical technologies. Furthermore, Digitópia intends to invite acclaimed artists performing at Casa da Música to leave their CC licensed “musical autographs” (e.g. short sound clips, loops, musical “licks”) that could be freely used by all Digitópia users and visitors as source material in their own musical projects.

## 4. FACILITIES

### 4.1. Space

Digitópia is located in the main entrance hall of Casa da Música, a space of great visibility and “unavoidable” by people that pass by regularly, since is close to the ticket office and main entrance. The connection between the areas is large enough to clearly establish Digitópia as a public area, yet adequately secluded, so visitors can feel at ease experimenting computer music making sometimes for the first time. The space is large enough to comfortably accommodate twelve similar stations – with two seats each, divided in two long tables facing each other – and has natural light.



**Figure 2.** Digitópia - showing one of two tables, with six of twelve stations.

### 4.2. Equipment

Each of the twelve stations is based around an Apple iMac computer (2.0 GHz Core 2 Duo, 2 Gb of RAM and 17 inch display) running MacOS X Tiger. Each station has two headphones and all the computers are connected via a 1 Gbit Ethernet network. Each station has one a midi controller, chosen from: M-audio O2 two octave midi keyboard, Korg padKONTROL pad controller and Korg K61P five octave midi keyboard (four units of each kind).

Some additional hardware is available to use at Digitópia, namely six Edirol R-09 field recorders, four self-powered speakers and one plasma display. Othe hardware is available on request, for workshops or special projects, from Casa da Música’s own production department.

### 4.3. Software

The available software in each computer is divided between two different kinds of user accounts: the first, free and open for all, was prepared to be as easy as possible to navigate through the different possibilities and shows a limited set of programs; the second is an account unique to each visitor that requests one, thus being completely configurable by the user.

The guest account was configured with different wallpapers that change automatically as the user waves the mouse pointer over the icons of the applications, presenting the software’s capabilities. This account was also configured to self-reset after some time of inactivity, so each new user finds an uncluttered and clean user interface. Apple’s iTunes is always open and users are invited to leave all their musical creations on its library, so they can be shared through the network.

Políssonos (a midi sequencer based on polygons), Narrativas Sonoras (an audio sequencer based on granular synthesis) and Digital Jam (for networked improvisation) are the main software titles created for Digitópia [2]. Other applications, available on all accounts, include: Audacity<sup>1</sup>, Ardour<sup>2</sup>, HighC<sup>3</sup>, DPS02<sup>4</sup>, Pompiloo<sup>5</sup>, Spear<sup>6</sup> and Tapestry<sup>7</sup>. Some commercial audio software is also installed: Apple GarageBand, Propellerheads Reason and Ableton Live.

The following programming environments are also available: miniAudicle<sup>8</sup>, Processing<sup>9</sup>, Pure Data<sup>10</sup>, SonicBirth<sup>11</sup>, SuperCollider<sup>12</sup> and the commercial Cycling ’74 Max/MSP.



**Figure 2.** Two young users composing with Políssonos on a guest account.

<sup>1</sup> <http://audacity.sourceforge.net/>

<sup>2</sup> <http://ardour.org/>

<sup>3</sup> <http://highc.org/>

<sup>4</sup> <http://www.notam02.no/DSP02/en/index.php>

<sup>5</sup> <http://www.pompiloo.com/>

<sup>6</sup> <http://www.klingbeil.com/spear/>

<sup>7</sup> <http://taps.cs.princeton.edu/>

<sup>8</sup> <http://audicle.cs.princeton.edu/mini/>

<sup>9</sup> <http://www.processing.org/>

<sup>10</sup> <http://puredata.info/>

<sup>11</sup> <http://sonicbirth.sourceforge.net/>

<sup>12</sup> <http://supercollider.sourceforge.net/>

## 5. RESULTS

After the first months of activity, Digitópia has already begun to enter the routines of some users, most of them youngsters. Some of them have reported great musical experiences and a few went on to develop new musical listening and experimentation habits after visiting Digitópia.



**Figure 4.** Teenagers are the main group of Digitópia users.

The establishment of communities of computer music creation around Digitópia has also begun, albeit slower than expected. The absence of a dynamic Internet presence, capable of connecting users outside of Digitópia, and the excessive isolation of each user, caused mainly by the use of headphones, have been identified as plausible causes for this.

An area we believe we have achieved a considerable success is on the development of interfaces for musical experimentation. The instant gratification attainable when using music software like Apple's GarageBand has been somewhat absent from the open source world. In everything that we implement in Digitópia, from a granular synthesizer to a network improvisation system, a great deal of time and care is spent developing the user interface, a process that has undoubtedly granted Digitópia some users less accustomed to computer music making.

## 6. FUTURE DEVELOPMENTS

The main future development of Digitópia will be the expansion of the concept outside of Casa da Música, both in the real and virtual world. We are currently launching the premises for a Digitópia web interface, strongly coupled to the original network at Casa da Música and capable not only of connecting users beyond the physical space at Digitópia, but also of sharing all the content created – and, specially, the tools to create it, including the Digitópia software – to new users around the world. Several institutions have already stated their interest in offering a Digitópia-like space within their services. The Digitópia web interface should thus provide all the resources and knowledge necessary to implement similar facilities in other places, at the same

time connecting them all in a broader community of computer music making.

Some ongoing research also includes the creation of interfaces for spatialization, network improvisation and musical expression, namely of individuals with different kinds of disabilities.

## 7. CONCLUSION

Digitópia fulfils an important role in Casa da Música's educational programme and is expected to have an impact well beyond its actual location. We believe we created an interesting resource, that is producing results within its initial aims but also providing experiences and tools that are already changing the approaches we have in other areas of creating and making music with schools or communities. Above all, we believe this an interesting idea that will grow and develop further and we look forward to share our experience and results with those interested in contributing to facilitate the access of a wider range of people to musical discovery.

## 8. ACKNOWLEDGEMENTS

We would like to acknowledge the invaluable collaboration of the Digitópia assistants – David Miguel, Filipe Lopes, José Alberto Gomes and Nuno Peixoto –, without whom the project couldn't have reached so many people, with quite diverse backgrounds, ages and nationalities. We also would like to thank the people at Casa da Música's IT department – with a special mention to Nuno Guedes –, our sponsors and Porto Digital, who lent us some of the equipment and software used. Also precious has been the enthusiasm and support of some researchers who visited Digitópia, such as Roberto Bresin, Bruce Pennycook and Martin Kaltenbrunner, amongst others.

## 9. REFERENCES

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